Faculty of Environmental Sciences

Study programme: **Environmental Data Science**
Type of study: **Bachelor study program**
Study form: **full time form of study**
Guarantor: **Ing. Mgr. Ioannis Markonis, Ph.D.**

St. year: 1 **2022/2023**

Code	Compulsory subjects	1st Semester winter						2nd Semester summer						Guarantee
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex	
ETZ04E	Algorithm Development	2	1	-	5	z	zk							Ing. Havránek, Ph.D.
ZEX101E	Fundamentals of Ecology	2	1	-	5	z	zk							doc. Morelli
ZGX118E	Fundamentals of Physical Geography	2	-	-	5	z	zk							Ing. Moravec, Ph.D.
ZVX103Z	Introduction to EDS	1	-	-	1	z								prof. Hanel
TAZ40E	Mathematics with Applications I	2	2	-	5	z	zk							doc. Jedlička
ZVX104Z	Productivity Tools	2	1	-	4	z								prof. Hanel
ZVX113E	Programming in R	2	1	-	4	z	zk							Mgr. Martínková, Ph.D.
ZVX112E	Earth System Sciences							2	2	-	5	z	zk	Ing. Mgr. Markonis, Ph.D.
ZVX114E	Exploratory Data Analysis							2	1	-	5	z	zk	Ing. Mgr. Markonis, Ph.D.
ZVX116E	Machine Learning							2	1	-	5	cr	ex	Ing. Havlíček, Ph.D.
TAZ41E	Mathematics with Applications II							2	2	-	5	z	zk	doc. Jedlička
ZVX115E	Meteorology and Climatology							2	-	-	5	z	zk	doc. Kyselý
ETZ03E	Programming in Python							1	2	-	4			Ing. Stočes, Ph.D.
Σ		13	6	0	29	0	0	11	8	0	29	0	0	58

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St. year: 2 **2022/2023**

Code	Compulsory subjects	3rd Semester winter						4th Semester summer						Guarantee
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex	
ZVX105Z	Advanced R Programming	1	2	-	5	cr								prof. Hanel
ZVX107E	Air Pollution	2	2	-	6	cr	ex							Mgr. D. Waldhauserová, Ph.D.
ZEX108E	Fundamentals of Biology	2	-	-	6	cr	ex							prof. Mandák
ZGX103E	Geographic Information Systems I	2	2	-	6	cr	ex							Msc. Malavasi, Ph.D.
ZVX108E	Hydrology	2	1	-	6	cr	ex							doc. Máca
ZEX110E	Botany							2	2	-	6	cr	ex	doc. Kocourková
ZVX115Z	EDS Seminar							2	-	-	3	cr		prof. Hanel
ZGX106E	Remote Sensing I							2	2	-	6	cr	ex	Ing. Moravec, Ph.D.
ZGX109E	Statistics							2	2	-	6	cr	ex	Ing. Zikmundová, Ph.D.
	Optional subjects (min. 15 ECTS)										15			
Σ		9	7	0	29	5	4	8	6	0	36	4	3	65

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St. year: 3 **2022/2023**

Code	Compulsory subjects	3rd Semester winter						4th Semester summer						Guarantee
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex	
ZEX112E	Environmental Data Collection and Processing	2	2	-	6	cr	ex							prof. Šálek
ZEX109E	Zoology	2	2	-	6	cr	ex							doc. Růžička
ZEX103E	Nature Conservation							2	1	-	5	cr	ex	RNDr. Plesník, CSc.
ZXX101Z	Bachelor Thesis WS	-	-	-	5	cr								Supervisor
ZXX109Z	Bachelor Thesis SS							-	-	-	25	cr		Supervisor
	Optional subjects (min. 15 ECTS)				10						5			
Σ		4	4	0	27	3	2	2	1	0	35	2	1	62

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St. year: 2 **2022/2023**

Code	Optional subjects	3rd Semester winter						4th Semester summer						Guarantee
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex	
ZOX103E	Environmental Chemistry							2	2	-	6	cr	ex	Ing. Hudcová, Ph.D.
ZGX120E	GIS II							2	2	-	7	cr	ex	Msc. Malavasi, Ph.D.
ZVX114Z	Hydroclimatological Data Analysis							2	1	-	5	cr	ex	Ing. Rakovec, Ph.D.

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St. year: 3 **2022/2023**

Code	Optional subjects	5th Semester winter						6th Semester summer						Guarantee
		Le	Pr	FE	ECTS	Cr	Ex	Le	Pr	FE	ECTS	Cr	Ex	
ZGX107Z	Cloud-computing and Analysis of Environmental Data	1	2		4	cr	ex							doc. Šmejda
ZEX105E	Geobotany	2	1	-	5	cr	ex							prof. Pavlů
ZGX113E	Human Geography	1	2		5	cr	ex							doc. Šmejda
ZVX120E	Water Quality	2	1		5	cr	ex							Ing. Sychová, Ph.D.

Podmínka pro splnění této skupiny předmětů:
Studenti získají celkem 60 kreditů za specializaci ve složení:
* povinné předměty 27 kreditů
* povinně volitelné předměty (z tabulky výše) - minimálně 18 kreditů
* zbytek (minimálně 15 kreditů) studenti doplní z jakékoliv specializace (včetně vlastní)